

**STANDARD OPERATING PROCEDURE
FOR RISK-BASED BEACH EVALUATIONS**

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**N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES
BEACH PROGRAM**

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Procedures

1.0 Scope and Application

- 1.1. The Beach Program uses a risk-based ranking system to evaluate and classify the designated coastal beaches. The system was developed to rank the sampling priority at each beach, as either Tier I (high priority) or Tier II (low priority); this ranking will determine sampling frequency of each beach.
- 1.2. This Standard Operating Procedure (SOP) provides the Beach Program staff with guidance for completing risk-based beach evaluations.

2.0 Equipment and Supplies

- 2.1. The following supplies are necessary for collection of data:
 1. Pencil/pen
 2. Definitions (Appendix A)
 3. Beach Evaluation and Classification Checklist (Appendix B)
 4. DES water quality data and reports (provided by Coastal Program, Shellfish Program, Beach Program, Clean Vessel Act Program, NPDES, and 305(b) and 303(d) reports).
 5. Data from the University of New Hampshire (UNH) and the National Oceanic and Atmospheric Administration (NOAA).
 6. Recreational water surveys for Towns, Beach Managers and Medical Facilities.

3.0 Data Collection-Preparation

1. Obtain a copy of the Beach Evaluation and Classification Checklist for each beach to be evaluated.
2. Obtain copies of data and reports specific to each criterion and beach.

4.0 Data Collection-Method

- 4.1. Cover Page Checklist
 1. Complete the form on the cover page as completely as possible. Access previous years' Beach Inspection data for the checklists pertaining to toilet facilities and other general information.

- 4.2. For each criterion in each of the three sections (Beach History, Microbial Pathogen Sources, and Beach Use), place a check next to the appropriate level of significance. The points will be awarded as follows:
 1. Inconclusive: 0 point
 2. Low Priority: 2 points
 3. High Priority: 3 points
 4. Shaded areas: 4 points
- 4.3. Refer to Appendix A for definitions used in the Risk-Based Beach Evaluation and Classification Form.
- 4.4. Risk-Based Beach Evaluation Classification Form should be completed as follows:
 1. Beach History
 - a. Access previous years' Beach Inspection data to determine each criterion's significance. Access information from other DES Programs, UNH, NOAA, or from municipal records if information cannot be found in the inspection data.
 - b. Tally the number of checks for each level of significance and place the total points in the final row.
 2. Microbial Pathogen Sources
 - a. Access the Shellfish Program Sanitary Survey reports, NPDES, and NOAA information to determine each criterion's significance.
 - b. Tally the number of checks for each level of significance and place the total points in the final row.
 3. Beach Use
 - a. Access Beach Program files and beach survey results to determine each criterion's significance.
 - b. Tally the number of checks for each level of significance and place the total points in the final row.
- 4.5. Preliminary classifications of the beaches are determined as follows:
 1. Tally the total number of checks for each level of significance and place in the respective row of the table.

2. Tally the total number of points for the preliminary classification.
3. Determine the preliminary classification.
 - a. The Tier II classification range is 0 to 39 points.
 - b. The Tier I classification range is 40 to 78 points.
- 4.6. Final considerations for beaches are determined as follows:
 1. The criterion “beach importance to the local economy” will be determined by surveying the towns and/or beach managers.
 2. The criterion “beach importance to public” will be initially ranked according to historical beach inspection data and knowledge of beach use. Upon collecting comments the criterion will be changed to reflect the general public opinion.
 3. Tally the number of points for each level of significance and place the total points in the final row.
 4. Based on beach specific information gathered determine if significant risk factors exist that should receive greater consideration. If so, explain and rank the consideration on a scale of one to five. One being the least significant and five the greatest.
 5. Determine the final classification based on the preliminary classification plus the addition of the total points from the final classification and considerations.
 - a. The Final Tier II classification range is 0 to 43 points.
 - b. The Final Tier I classification range is 44 to 89 points.

5.0 Data and Records Management

- 5.1. Upon completion of evaluations, the Program Coordinator will generate a sampling schedule based on the number of beaches ranked as either Tier I or Tier II. The schedule will follow the Beach Program Tiered Monitoring Plan.
- 5.2. The Beach Program Coordinator will compile the risk-based beach evaluation forms, data, and reports in beach specific folders at DES headquarters.
- 5.3. The Beach Program Coordinator will store evaluation results electronically in beach specific spreadsheets.

APPENDIX A

Definitions for Risk-Based Beach Evaluations

The following terms, found within the Beach Evaluation and Classification Checklist, demand greater clarification.

- **Actual threat or source:** an existing structure or conduit that contributes or transports contaminants to a beach area, thus causing negative health impacts to humans.
- **Potential threat or source:** an existing structure or conduit that may contribute or transport contaminants to a beach area but sufficient data has not been collected to assess impacts on water quality.
- **CSO:** Combined Sewer Overflow
- **TMDL:** Total Maximum Daily Load
- **WWTF:** Waste Water Treatment Facility

APPENDIX B

Beach Evaluation and Classification Checklist



Coastal Beach Evaluation and Classification Checklist

Beach Name: _____ Town: _____

Latitude: _____ Longitude: _____

Date of Evaluation: _____ County: _____

Responsible Authority: _____

Contact Person: _____

Address: _____

Phone: _____ Fax: _____ Email: _____

Beach Area (Physical Description)

- ☐ Sandy
- ☐ Rocky
- ☐ Other _____

Area Development

- ☐ Residential
- ☐ Commercial
- ☐ Industrial
- ☐ Other _____

Toilet Facility

- ☐ Present
- ☐ Absent

Holding Type

- ☐ Portable toilet
- ☐ Septic system
- ☐ Holding tank
- ☐ Sewer

Condition

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

Distance to Surface Water (for septic systems only)

- ☐ <50 feet
- ☐ 50 to 100 feet
- ☐ >100 feet

Name: _____ Title: _____

Agency: _____

Address: _____

Signature: _____ Date: _____

Risk Based Beach Evaluation and Classification Form

Criterion	Significance					
	Inconclusive 0 points	X	Low Priority 2 points	X	High Priority 3 points (unless otherwise noted)	X
Beach History Rank the significance of historical data by checking the appropriate column.						
Reported health issues	No reports or Data not available		≤ 2 reports		3 or more reports per year	
Historical exceedance of bacteria standards in previous 10 years	No exceedances or Data not available		1-5 exceedances		> 5 exceedances (4 points)	
Historical cyanobacteria advisories	No advisories or Data not available		< 2 advisories issued		3 or more advisories issued	
Mean time for public notification	Data not available/not applicable		< 24 hours		≥ 24	
Mean number of days beach affected by advisory during bathing season	Data not available/not applicable		≤ 2 days		> 2 days	
Mean high water temperature during swim season	Data not available		< 60°F		≥ 60°F	
Wildlife present on beach during inspections	None present or Data not available		Present at < 50% of inspections		Present at ≥ 50% of inspections	
<i>Beach History total points by category</i>			<i>Total Low Priority points</i>		<i>Total High Priority points</i>	
TOTAL BEACH HISTORY POINTS						

Criterion	Significance					
	Inconclusive 0 points	X	Low Priority 2 points	X	High Priority 3 points (unless otherwise noted)	X
<p align="center">Microbial Pathogen Sources</p> <p align="center">Rank the significance of possible microbial pathogen sources by checking the appropriate column.</p>						
Average annual precipitation	Data not available		< 25 inches		≥ 25 inches	
Number of significant (> 3 inches) rainfall events in the past year	None or Data not available		1 event		2 or more events (4 points)	
Data available from monitoring rainfall vs. bacteria counts	No risk or Data not available		Low detected risks		Moderate or high detected risks	
Source of fecal contamination within 1 mile of beach	None or Data not available		1 or more potential sources		1 or more actual sources (4 points)	
Point sources: industrial waste within 1 mile of beach	No sources or Data not available		1 or more Potential sources		1 or more Actual sources (4 points)	
Number of CSOs within 5 miles of beach	None or Data not available		≤ 2		> 2	
Proximity of WWTF discharge to beach	None or Data not available		≥ 5 miles		< 5 miles	
Estimated number of septic systems within 1 miles of beach	None or Data not available		< 25		≥ 25	
Do town ordinances allow domestic animals on this beach during bathing season?	Data not available		No		Yes	
Marina with boat pumpout facilities within 1 mile of beach	No marina		Marina with pumpout facility		Marina without pumpout facility	

Presence of boat mooring sites within 1 mile of beach	None or Data not available		< 10 moorings present		≥ 10 moorings present (4 points)	
Proximity to waterbody that requires a TMDL study for bacteria in the watershed of beach	None or Data not available		> 2 miles		≤ 2 miles (4 points)	
<i>Microbial Pathogen Sources total points by category</i>			<i>Total Low Priority points</i>		<i>Total High Priority points</i>	
<i>TOTAL MICROBIAL PATHOGEN SOURCES POINTS</i>						

Criterion	Significance					
	Inconclusive 0 points	X	Low Priority 2 points	X	High Priority 3 points (unless otherwise noted)	X
<p align="center">Beach Use</p> <p align="center">Rank the significance of beach use by checking the appropriate column.</p>						
Mean number of days in bathing season	Data not available		< 50		≥ 50	
Mean percentage of beach goers that enter the water	Data not available		< 25%		≥ 25% (4 points)	
Mean number of bathers during peak recreation days (weekends/ holidays)	Data not available		< 50		≥ 50 (4 points)	
<i>Beach Use total points by category</i>			<i>Total Low Priority points</i>		<i>Total High Priority points</i>	
TOTAL POINTS FOR BEACH USE						

Classification

Preliminary Values

Once the Beach Evaluation and Classification Checklist is complete, tally the number of checks for each table (Beach History, Microbial Pathogen Sources, Beach Use) and record the total points in the appropriate column below.

Level of Significance	Total Points
Beach History	
Microbial Pathogen Sources	
Beach Use	
FINAL TOTAL	

Preliminary Classification:

Circle One:

Low (Tier II)
(0-39 points)

High (Tier I)
(40-78 points)

This is the preliminary classification of the beach. To make a final classification fill out the Final Criteria table on the following page and total the checks for that table.

Final Criterion	Significance					
	Inconclusive (0 point)	X	Low Priority (2 points)	X	High Priority (3 points)	X
Final Considerations Rank the significance of the considerations by checking the appropriate column						
Beach importance to the local economy	N/A or not known		Not important to economy		Highly important to economy	
Beach importance to public	N/A or not assessed		Beach not considered a popular area for tourists or local residents		Beach is considered a highly popular area for tourists or local residents	
<i>Considerations total:</i>						

Compare total number of points from above with the Preliminary Classification.

Are there other factors at this beach that need to receive greater considerations?

☐ Yes ☐ No ☐ Unknown

If yes, please provide significant factors: _____

If yes, rank the significance on a scale of 1-5, one being the least significant or important to the beach; five being the most significant or important to the beach.

Circle one: 1 2 3 4 5

Add the points to the final considerations above.

Final Classification

Classification Phase	Points
Preliminary Classification	
Final Consideration	
FINAL POINTS	

Circle one: **Tier II** **Tier I**
 (0 to 43 points) (44 to 89 points)

Final Classification Category: _____

Comments: